

Name \_\_\_\_\_

Period \_\_\_\_\_

# Chemistry I

## Stoichiometry

### 2013

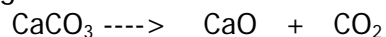


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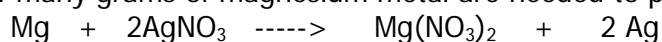
## Stoichiometry Problem Worksheet B

Show **ALL** work for stoichiometry problems.

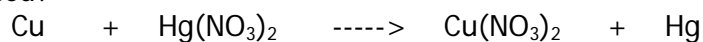
1. How many grams of calcium oxide can be prepared from 50 grams of calcium carbonate?



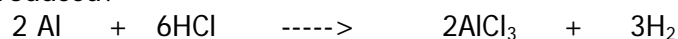
2. How many grams of magnesium metal are needed to produce 1.0 gram of silver metal?



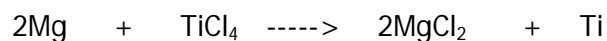
3. If 55 grams of copper react with mercury II nitrate, how many grams of mercury metal are produced?



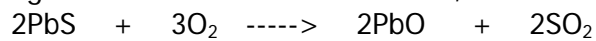
4. When 70 grams of aluminum metal react with hydrochloric acid, how many grams of aluminum chloride are produced?



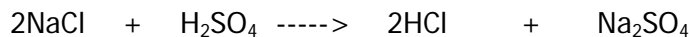
5. How many grams of titanium metal are produced by reacting 10.00 grams of titanium chloride with magnesium?



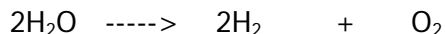
6. If 480 grams of lead sulfide are roasted, what mass of lead II oxide is produced?



7. What mass of hydrogen chloride is produced when sulfuric acid reacts with 200 grams of pure sodium chloride?



8. In the decomposition of 156 grams of water by electrolysis, how many liters of oxygen gas are produced?



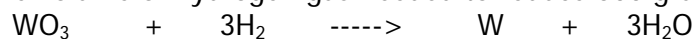
9. How many liters of oxygen are required to oxidize 100 grams of aluminum metal?



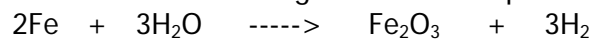
10. If 25 liters of hydrogen are produced by the reaction of sodium metal and water, how many grams of sodium were used?



11. Calculate the volume of hydrogen gas needed to reduce 500 grams of tungsten oxide?



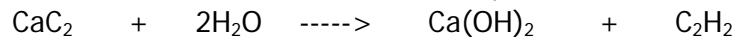
12. Calculate the mass of iron reacting with steam to produce 6500 liters of hydrogen gas.



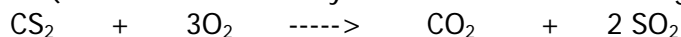
13. How many MOLES of sulfur are needed in the production of 1800 liters of sulfur dioxide?



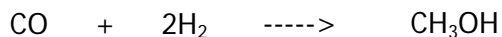
14. If 500 grams of calcium carbide react with water, what volume of acetylene gas is produced?



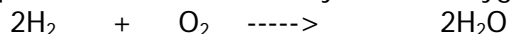
15. If 150 mL of carbon disulfide ( $D_{20} = 1.26 \text{ g/mL}$ ) are burned, how many liters of sulfur dioxide are produced? (HINT: use the density as a factor to convert to grams!)



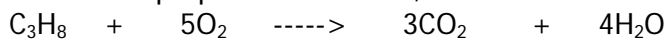
16. In the production of methanol, how many liters of hydrogen are needed to react with 475 liters of carbon monoxide?



17. To produce water, how many liters of oxygen are needed to react with 500 liters of hydrogen?



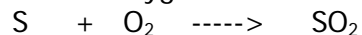
18. If 200 liters of propane are burned, what volume of carbon dioxide is produced?



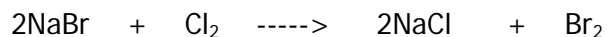
19. How many liters of oxygen are needed to oxidize 500 liters of carbon monoxide gas?



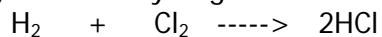
20. How many liters of oxygen are needed to react with sulfur to produce 5000 L of sulfur dioxide?



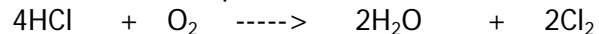
21. How many liters of chlorine gas are needed in the liberation of 300 liters of bromine gas from sodium bromide?



22. How many moles of hydrogen chloride are needed to form 0.55 moles of  $\text{Cl}_2$ ?



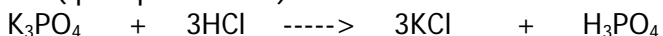
23. How many moles of  $\text{Cl}_2$  are produced from 6.30 moles of hydrogen chloride?



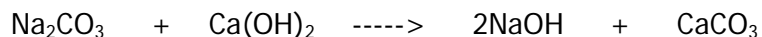
24. How many moles of potassium permanganate are needed to produce 0.76 moles of manganese chloride?



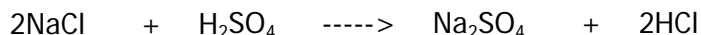
25. If 120 grams of potassium phosphate react with hydrogen chloride, how many grams of hydrogen phosphate (phosphoric acid) are formed?



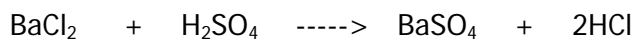
26. When 80.0 grams of sodium carbonate react with calcium hydroxide, what mass of calcium carbonate is produced?



27. If 90.0 grams of sodium chloride react with sulfuric acid, how many grams of sodium sulfate are produced?



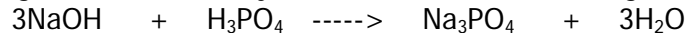
28. If 100.0 grams of barium chloride react with sulfuric acid, how many grams of barium sulfate are produced?



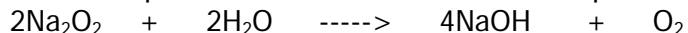
29. How many grams of oxygen will decomposing 480 grams of potassium chlorate produce?



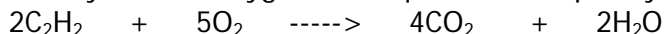
30. How many grams of sodium hydroxide will react with 150 grams of phosphoric acid?



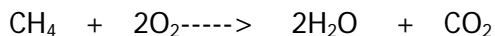
31. How many grams of sodium peroxide must react with water to produce 75.0 liters of oxygen?



32. How many liters of oxygen are required to completely burn 1800 liters of acetylene gas?

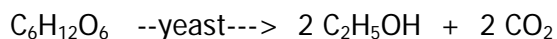


33. What volume of oxygen is needed to completely burn 225 liters of methane gas ( $\text{CH}_4$ )?



34. In the fermentation process, glucose can be converted to ethanol. How many milliliters of ethanol will be produced if 90000 gm of glucose are fermented?

(HINT: 1. find the number of grams of ethanol 2 Then use 0.8 g/mL to convert grams to mL.)



35. During the incomplete combustion of 5000 L of propane, how many grams of soot (C) are produced?

